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MAGIC LANTERN
JOURNAL
AND
PHOTOGRAPHIC ENLARGER.

EDITED BY J. HAY TAYLOR

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Notices.

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Notes.

ONE of the latest adjuncts to the outfit of a lanternist is said to be a luminous crayon, by which diagrams may be drawn on a black board in a darkened room, so as to be visible to the audience.

* * *

IT is reported that M. Lippman (Paris) has made advances in colour photography, and that by his system, colours throughout the whole range of the spectrum can be reproduced on a sensitive plate, just as accurately as outline and shadow are pictured by the present photographic negatives.

* * *

DURING the past autumn the Temperance Van Mission have held a number of open-air lantern exhibitions in towns in the south of England. The results have been so successful that several additional vans are to be sent out next season. A bazaar in support of the scheme is to be held during July at the Holborn Town Hall (London).

* * *

A YANKEE chimney sweep is said to do a thriving business by advertising with a triple lantern. On a screen he projects a picture of a room and fireplace (labelled, before sweeping); smoke and flame issue from the fire. After a while the same view, with a comfortable fire burning, is projected (labelled, after being swept by ——).

* * *

WE learn from a local contemporary that Mr. W. Stock's new oil lamp has been introduced, although we have not yet had an opportunity of seeing it. The *South Eastern Advertiser* (Rye) speaks in high terms of it, and describes it as "*his newly invented powerful (provisionally patented) oil optical lamp—equal to the lime light.*" Our correspondents who have lately been inquiring about improving oil lamps will doubtless be glad to hear of this.

* * *

MR. F. H. SMITH, 107, Falcon-road, Clapham Junction, has been appointed hon. sec. of the West Surrey Amateur Photographic Society, in place of Mr. G. H. James, resigned.

ALL applications for space at the Crystal Palace National Photographic Exhibition, in April next, must be sent in by the 23rd inst. The optical lantern entertainments, which have proved so attractive, will be rendered more popular and interesting than hitherto by the addition of several novelties.

* * *

A CORRESPONDENT takes objection to the paragraph in our last "Notes" in which we made reference to lanterns in churches, by sending us a post-card with the paragraph pasted thereon, and marked "God forbid."

* * *

THE London and Provincial Photographic Association will give a lantern evening on 3rd inst, at the Champion Hotel, Aldersgate-street. Songs, music, and the lantern, will be included in the programme, which will be under the management of Messrs. Bridge and Freshwater.

Triple Lantern Condensers.

THE subject of lantern condensers must necessarily prove of the highest interest to lantern exhibitors, because on them depend the intensity and evenness of the illuminated disc. This topic formed the theme of a lecture delivered before The Lantern Society by Mr. J. Traill Taylor. He commenced by analysing the functions of condensers, dividing them into the two properties of collecting light and condensing it. The collecting element in the condenser he stated to be the most important one; its functions should be to include the greatest possible angle of light and transmit it to another lens by which it was condensed to the objective.

It is easy enough to have a collecting element formed of one lens provided the light was situated at a considerable distance from it, but in this case very much of the light would be wasted by not being transmitted to the screen. A safe distance of the radiant had been stated to be from 2¾in. to 3in. from the first surface, but the lecturer had had a very powerful limelight burning for nearly two hours at a distance of 2in., which he assumed to be a perfectly safe one. In order to include a wide angle of illumination, it was necessary that a lens 4½in. in diameter should be the first element of the collecting system. It was obvious, however, that parallel rays could not be transmitted by a single lens placed at such a distance, for to do so would entail a thickness of glass so great as to be altogether dangerous, besides which the margin of such a lens would be unable to transmit the light. To meet this it was necessary that the collecting system should be a binary one at the least. This enables the lens nearest the light to be made correspondingly thin, and also to transmit a very wide angle of light up to its edges. The rays then pass divergingly through it to the second element of the collector at a much smaller angle, and is by it transmitted throughout its whole aperture.

The diameter of the second lens should be 5in., for if the whole system were made smaller than this it would entail the necessity for the light being brought so near as to endanger the safety of the first lens. The light now passes in a nearly parallel form on to the condenser proper, which is composed of a single lens of any suitable focus of the form best adapted for bringing parallel rays to a point. A condenser having a triple collecting system was exhibited, in which the aberations were so carefully corrected that with a small light, a parallel beam of many feet in length could be transmitted without losing its cylindrical shape, but he thought the triple collector entailed an unnecessary expenditure of optical means to secure a gain that was not commensurate, for the radiant in a lantern was not a mere point, but possessed an area as large as the end of his finger, or, say, a threepenny piece. For this reason he considered that the balance of advantages lay in a double instead of a triple system of collectors.

He sketched on the blackboard the two different collecting systems, traced the rays of light through them, and gave the curves requisite for their construction for various kinds of glass. One advantage of this condenser was that, in addition to transmitting an amount of light very much in excess of that obtained by any of the condensers now procurable in commerce, the light could be employed much more effectively for such scientific purposes as polarizing than by any other means.

The angle of polarization was a definite one, and that could not be secured in an effective manner by rays which converged on the bundle of glass plates that served as the polarizer in the lantern. He described the means by which he had effected this by the intervention of a concave lens to render the converging rays parallel. He had brought this before the British Association for the Advancement of Science over twenty years ago, and it was received by them with much approbation. But the American system of transmitting the rays in a parallel beam from the collecting system of the condenser was in his estimation superior to his own.

Having secured the maximum of light, the next question was its condensation through the picture and upon the object glass of the lantern. He recommended that the condensing lens should be easily separable from the collecting system, which ought to be fixed. This condensing lens should be of a form to suit the distance at which the objective is situated. For example: if it were one of short focus, the focus of the condensing lens might be 8in. or thereabouts, to which end a plano-convex of 5in. diameter and about 4in. radius would suffice. If, however, to suit the requirements of a very long hall, an objective of much longer focus had to be employed, then would the focus of the condensing lens be long in a corresponding degree; and as a plano-convex lens of that diameter would be thin and not cost very much, he suggested that the perfect lantern ought to be fitted with more than one of these.

The focus of a plano-convex lens equals the diameter of its sphere of convexity; thus, for a 16in. objective, the radius of the condensing lens would be about 8in., which, with 5in. diameter, will give a practically thin lens.

With regard to a possible objection—as to loss of light by reflection from two extra surfaces—that was altogether unworthy of consideration in view of the greater intensity and equality of light obtained by the triple system.

The angle of light thus included is nearly 95 deg. as against 60 deg. by the best commercial condensers. Mr. E. M. Nelson subsequently mentioned that the intensity of light at different distances from the condenser varied as the square of the sine of half the angle included, from which the great gain obtained by this system recommended might be estimated.

——:o:——

The Lantern for Suffering Humanity.

WE are pleased to announce that our efforts for providing an occasional entertainment for patients in hospitals and kindred institutions have been so far successful. Several such movements have started in various parts of the provinces. Mr. Teale, president of Plainfield Camera Club, near New York, U.S.A., writes to say that he intends putting the movement on foot there.

For the use of Metropolitan institutions, the following donations have already been made:—

Messrs. Perken, Son. and Rayment, 99, Hatton-garden, E C., a bi-unial lantern with attachments for converting into two single lanterns.
Mr. Walter Tyler, 48, Waterloo road, a helioscopic lantern, complete with blow-through jet.
Messrs. York and Son, 87, Lancaster-road, Notting-hill, 154 slides in sets.
Mr. R. H. Clark, Royston, Herts, 48 slides (comic).
J. W. and S., oxygen bottle and carriers.
Mr. F. J. Balson, N. Allington, Bridport, 16 slides.
Hon. Slingsby Bethel, 15 slides.
Brins Oxygen Co. (per Mr. Murray) have promised to fill the bottles with oxygen as required.
Messrs. J. F. Shew and Co., Newman-street, screen.

Several who have promised slides have yet to be heard from.

The committee have a list of volunteers who have kindly offered their services, and a programme is now being arranged.

More slides and other sundries are yet required, and of course money in hand is necessary to cover the expenses of carriage of apparatus, &c. For this purpose it is intended to open a subscription list, which at present stands thus:—

	s.	*d.*
Mr. R. C. Ralph	10	0
Hon. Sec.	10	0

Each donor, volunteer, or annual subscriber of 5s. and upwards will be considered a member of the Hospital Lantern Society, whilst all subscribers of 10s. and upwards, will have the right of nominating an institution in which they may be interested, such to obtain priority.

Several exhibitions have already been given at the London Hospital, Camberwell, Clapham.

Communications to be sent to the hon. sec. and treasurer, J. J. Jones, 10, Lydon-road, Clapham, S.W.; or to J. Hay Taylor Editor of this Journal.

——:o:——

Hand Cameras for Obtaining Slides for the Lantern.

	"Facile"	(Fallowfield)	see	March 1st, 1890.
No. 1	"Giah"	(Mawson & Son)	,,	May 1st, ,,
,, 2	"Quadrant" ...	(W. H. Humphries & Co.)	,,	June 1st, ,,
,, 3	"Eclipse" ...	(J. F. Shew & Co.)... ...	,,	July 1st, ,,
,, 4	"Eureka" ...	(W. W. Rouch & Co.) ...	,,	Aug. 1st, ,,
,, 5	"Key"	(Platinotype Co.)	,,	Sept. 1st, ,,
,, 6	"Optimus" ...	(Perken, Son & Rayment)	,,	Oct. 1st, ,,
,, 7	"The Griffin"	(Griffin & Sons, Limited)	,,	Nov. 1st, ,,
,, 8	"The Swinden-Earp" Patent	... ...	,,	Dec. 1st, ,,
,, 9	"Collins"	(C. G. Collins)	,,	Feb. 1st, 1891.

No. 10.—KODAK.

THERE are few but who associate the name Kodak with hand camera, and the expression *to kodak* (*i.e.*, use a hand camera) is a familiar one.

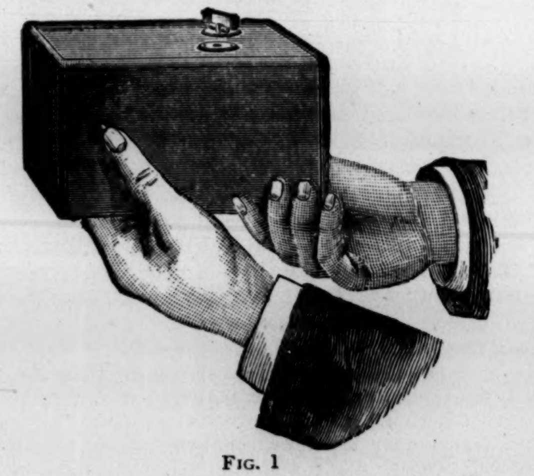

FIG. 1

The Kodak owes its origin to the Eastman Walker Co., and is an extremely compact piece of apparatus. Although Kodaks are made in various sizes, from 2½in. circular pictures to 5in. × 7in., we will confine our description to the size best adapted for lantern work—not that the others differ essentially. That which is known as Kodak No. 3 gives pictures 3¼in. × 4¼in.

The general appearance of the various Kodaks is very similar, and a good idea is conveyed by the illustration Fig 1. It will be observed that a key stands on top of the camera; this is employed for presenting a fresh sensitive surface opposite the lens —for the Kodak uses a continuous transparent film.

An ingenious mechanism, termed a roll-holder (Fig. 2), occupies the greater portion of the camera; a spool of film is secured in its place, and the film is brought over rollers past the exposing plane, and the end secured to a roller which terminates in a key on the top of the camera.

The spool holds sufficient film for sixty or one hundred exposures, each revolution of the indicator, which is operated by the key, presenting a new surface for exposure.

By a simple method a puncture is made in the film between each exposed portion, so that when cutting up the film for development there is no chance of dividing the band except between the exposed portion.

The lenses fitted to this Kodak are high-class rectilinears; they have a shutter working between the lenses and rotating stops and adjustable speed; there is also a rack and scale for focussing.

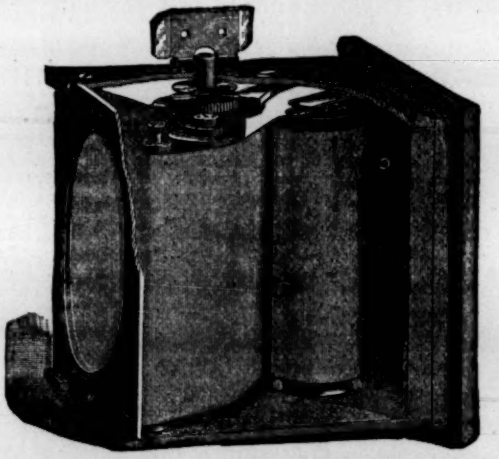

Fig 2.

Finders are provided both for horizontal and vertical exposures, and provision is also made for attaching it to a tripod for time exposures. The camera is covered in morocco, it measures 4¼in. × 5½in. × 11½in., and weighs 4lb. when charged for one hundred exposures.

To one familiar with Kodaks, the instructions to be chiefly borne in mind are—(1) Pull the string; (2) Turn the key; (3) Press the button.

:o:

MANCHESTER AMATEUR SOCIETY.—Mr. R. O. Gilmore writes: "You say in your February issue that the Manchester Amateurs are big slide makers; well, they are, and they give entertainments at the different clubs and ragged schools, and I may say they are now having rooms fitted where slides can be made, and one end of the room painted white, and a lantern there ready so that a slide can be tested at once. They now own three lanterns, all good ones—a single oil, a single lime lantern, and a new three decker valued at £200."

Hints on Enlarging.

BY A. R. DRESSER.

CHAPTER V.

NOW having decided which way you will enlarge, the next point is what to enlarge upon. I fancy very few amateurs will care to make enlarged negatives, but my advice to those who do is, use a good and slow plate, take great care to keep clear of dust, which is one of the greatest evils you have to contend with; as to the developer to use, if one knows how to work, almost any developer will give good results; but I prefer the hydroquinoine for making positives and enlarged negatives. I generally make an enlarged positive of half plate size from my quarter plate, then varnish it, and add any little retouching it may require, and then from the half plate positive make an enlarged negative of the desired size. I shall only just touch on this way of enlarging, as I fancy it is seldom used except by the profession, and by very few amateurs; of course it has its advantages, but again it is a great trouble and expense.

Most amateurs will, doubtless, enlarge direct on bromide paper, and that is certainly the way I recommend.

Working bromide papers is like working dry plates: it is essential to select a good brand of paper, learn how to work it properly, and stick to it, not go trying first one, then another make, and finally if not successful throw the blame on the paper, when it is in reality your own fault. At the present day, when bromide paper is in such demand and so well known, no maker puts bad paper on the market for his own sake.

There is a variety of bromide papers on the market to select from. I prefer Fry's argentotype, or the Eastman Co.'s, as I am thoroughly conversant with them, and can depend when using these bromide papers of always getting good results, and if I did not, I should have myself to blame. I am a great advocate for bromide paper, and do all my printing, whether by contact or enlarging on it, and whichever way I work I can get results that satisfy me, and that is the chief point. I am one who likes the black tones, and always strive to get results like platinotype; and find I can easily do so, but then I get a lot of practice. For those who like warm (brown and red) tones, I would advise the use of "Alpha" paper, which, after one has used for a short time, will enable him to get almost any colour he may require; but for enlarging it must be remembered that it is slow, and requires a much longer exposure (quite four to six times as long as the bromide papers I have mentioned), so if you expect to succeed in your enlarging find out the make of bromide paper you will work, and stick to it till you are perfect in all its workings; then if you like (not that I advise it) try others.

If you expect to get perfect, or rather really good results in your enlargements, learn to do double printing—that is learn to print in skies, so that there is not a great space of white where there should be a sky. I feel strongly on this point, and always print a sky in where required. It is not hard to learn, and should be learnt at all costs. A few trials will master it; it can only be acquired by experience and various trials. I have no time now to go into the way how to do it. but should fancy by this time all amateurs know how it is done, but are themselves afraid to try, as they fancy it is hard to do; but it is not so in reality.

——:o:——

How I Became a Lanternist.—III.

By the Vice-Chairman of the Lantern Society.

I need not say that at the next occasion on which a similar exhibition was made, I took precautions to keep the show inside the house, partly with a view to saving my own light, and also to obtain greater quietude. I afterwards experimented in other directions with the same apparatus, the results of which will convey, let me state, but little, if any, information, though I shall venture to send them to Salisbury-square in due course.

I hope these double-cylinder, thousand-pound to the inch exhibitors who read this most lucid account of my little day of very small things will, while they smile at my weakness and folly, remember that they were once children in the art. "Begin low, soar high, and catch fire," is a Welsh proverb peculiarly applicable to human nature at large—to magic, scientific, opticalistic lantern men in particular. Besides, I know just one other very fair proverb I may put into use—"Despise not the day of small things." Knowing the pleasure the lantern gives. I say, better begin with a half-guinea tin box than not begin at all. But I must stop, for I find I am getting serious and that is misleading for the nonce.

I have alluded to the day of small things. I have made that allusion because I believe in it as a principle as well as a policy in practice. I have met before to-day with enthusiastic devotees of the lantern who have seen some well-managed exhibitions, aided by a powerful and well constructed apparatus, showing pleasant pictures in a crowded room on a winter's evening. I have seen them rush into a big expenditure at once, to find *after* learning the art that they had not the implements they needed.

There is perhaps no fascination more powerful to any man who loves art instinctively, though he may be ignorant of it technically. I look upon it that it is one of the achievements of the time to be able by mechanical means to depict a scene that takes one's fancy, or even to catch some passing incident of life and activity, to develop it in the darkness into a picture, and by the aid of artificial light to throw it before innumerable folk upon a white sheet of a large size. The lantern itself and its appliances are in their infancy. Its possibilities, however, are limitless. Who ten years ago would have dreamt that the possibility was near at hand of our being able to float a journal specially devoted to this one hobby or amusement? But the lantern is something more than a hobby, it is something more—than an amusement; indeed it is both and something more, it is a scientific and powerful teacher, it is at least a means to a greater end, and that end is to take people out of themselves away to the fields, mountains, rivers, to distant cities, to the four corners of the earth, in fact, to wherever civilized men can penetrate. Of course photography has been the chief engine in accomplishing all this, and as photography is young it will go on to still greater heights of success.

But I was forgetting, I fear, that I have lapsed—owing to that enthusiasm of feeling that carries some of us weaker spirits along and away—into rhapsody and platitude. I won't apologize, but I will make amends by coming back to the level earth.

Having amused my family and other families, embracing all ages from the bright laughing juveniles to their fathers, mothers, and even grandfathers and grandmothers, the next step I took led me a flight higher. Whenever I journeyed forth if I saw a lantern shop I selected a few slides, photographic views. I furbished up my lamp and did everything possible to try and show these pictures, and I succeeded in getting a very fair representation of photographs if I restricted the disc to about 4 inches square or rather round; but anything larger became weak, fuzzy and phantom-like. As I could not at the time do more than feel my way quietly, I got hold of a great number of interesting and humorous cuts from the illustrated papers—cuts reproduced, however, by photography and turned into lantern slides. These of course did not require an extra good light; in fact good light is too much for them; they cannot stand it any more than a donkey is said to stand oats! I was very sorry, however, when some of these beautiful photo slides I valued so much could not be seen so that I could reveal the capabilities and beauties in a realistic style.

I continued to try a number of coloured pictures, and these I was enabled to use by hiring a two wick oil lantern, with which I made a very fair show on many occasions. The knowledge that I had a sort of liking for this sort of thing brought to me requests to go and give readings or lectures for lantern exhibitions by other persons, occasionally oil apparatus, varied occasionally by lime-light, bi-unials, and so forth. In this way instead of getting out of it I got further in the thralls of the enchantment, and on removing to London in 1873, I invested in one of the best species of oil lanterns, viz., Mr. Hughes's popular Pamphengos. I gave with this apparatus a number of exhibitions, on which I may have something to say and the results which followed in another article.

——:o:——

Experiences with the Ether-Oxygen Light.

By C. Goodwin Norton.

The following facts may be useful to those who desire the question of the utility and safety of the ether-oxygen light threshed out.

I have been using the saturator out of doors for advertising purposes, charged with White's ether, 7·17, the oxygen being supplied from a cylinder fitted with Clarkson's regulator. The saturator was fully charged, all surplus fluid being drained off. The jet gave a steady light for two hours, when I found that just as good a light was showing after the pure oxygen was quite cut off. Knowing what to expect, I got behind a large board and gently turned out the light; there was an explosion loud enough to have caused a panic amongst any audience, had it occurred inside a hall, more especially as the turned-down gas would certainly have been extinguished by the concussion. The next occasion the apparatus was used under precisely similar conditions; there was no explosion, the light being turned quietly out.

The third time of using there was an explosion, the taps not being touched, and no person being within 20ft. of the light which had been burning for one and a-half hours; 6ft. of gas were still in the cylinder. In every case all the usual precautions recommended by the sellers of the saturator were taken. The saturator was fully charged with the lightest ether procurable. A mixed jet was used. The light was adjusted at the jet, not at the cylinder; there was no ether spilt in the tubes, nor any surplus in the saturator, and no one touched the apparatus. I am quite unable to suggest anything to prevent these explosions; perhaps some of the advocates for the use of ether can enlighten me. Safety valves I have tested, but found them unreliable.

The moral of the above is, if I, a lantern expert, accustomed to use every kind of limelight, and making it a special study, cannot be sure of preventing an explosion, after taking every known precaution, what is to be expected of the amateur who only uses his lantern occasionally, and is obliged to take for granted what the dealers tell him?

I would impress on all amateurs to keep to the blow-through jet; with a little experience and good limes, sufficient light can be got to properly illuminate a coloured photo 15ft. in diameter 50ft. from lantern.

The few amateurs who require a better light should use two bags or two cylinders, whichever suits best.

:o:

Lantern-slide Making.*

By Edgar G. Lee.

At the present day, the most popular process is the gelatino-bromide; although the collodion, both wet and dry, and other processes, give more latitude as regards the production of a good slide from an indifferent negative. First of all, it is necessary to consider what constitutes a good slide. One in which the highest lights are represented by clear glass, and the deepest shadows are of such a density as to be easily penetrated by a fair average light in the lantern. A good slide need not be composed of, say, equal proportions of clear glass and opaque deposit. So long as we have a trace of clear glass to add brilliance to the picture on the screen, it may be with advantage as seen *out of the lantern* to appear a trifle thin.

To produce this *good* slide, having the characteristics which I have mentioned above, a negative is required showing considerable contrast. Personally I prefer one of the type which yields a brilliant or plucky silver print. Whilst on the one hand a negative of the most extreme density will make a passable slide, thinness and want of contrast of the character which is suitable for bromide printing is for slide work absolutely hopeless.

Coming to the actual working we have two methods: reduction and by contact. To the latter method I confine myself almost entirely, as nearly all my negatives are ½-plates. The first point to be considered is exposure, which may be made to a paraffin lamp, gas burner, or magnesium wire; daylight, of course, being too strong and uncertain. Gaslight is, generally speaking, most useful, and exposures with the printing frame two feet from an average burner may run from thirty seconds to ten minutes, varying according to the density of the negative. For very dense negatives, exposure to magnesium wire is to be decidedly recommended. With a negative verging on thinness, the exposure must be fairly exact, but with a dense negative and certain brands of lantern plates the latitude is simply enormous, and much greater than is usually supposed. With such a negative the exposure may be ten times the normal, and a perfect slide result from it; of course, varying in tone according to the extent of exposure. I have observed that the general tendency of beginners is to under-expose, which is fatal, as the image either develops up patchy, or veils over before density is obtained. A lantern plate can *not* be forced in development.

As to development, we have the choice of four reducing agents: ferrous oxalate, pyro, hydroquinone, and eikonogen. Each and all of these are capable of producing equally good results in the hands of careful workers. The easiest, by reason of the latitude it permits, is hydroquinone, the tone being dependent partly upon the negative, partly upon the exposure, and in no small degree upon whether the development is rapid or gradual, a remark which will be found to apply to any developing agent. It is not my intention to recommend any one formula, believing as I do that there is nothing magical in any prescribed combination of chemicals. My advice would therefore be to choose a well-tried and reliable formula and stand by it.

For warmth of tone pryo is, without doubt, the best developer, and as the tendency is now in that direction, it merits our attention. There is no difficulty in its use if we remember its staining properties, to counteract which it is always employed with a much larger proportion of preservative.

The image when fully developed has an over-done, sunk-in appearance, and unless this point is arrived at, the slide when taken from the fixing bath will be found much too thin.

After fixing in a perfectly clean hypo bath and a thorough washing, the slide will in all cases be the better for a short immersion in an alum and citric acid bath, which clears up the picture and improves its brilliance. If too dense or fogged beyond the capacity of the acid bath to reduce, the ferricyanide of potash and hypo reducer (made distinctly alkaline with ammonia) should be resorted to.

Intensification at its best (which best may be represented by mercury and cyanide of silver) is but an unsatisfactory proceeding, and much the better alternative is to make another slide. Intensifying by mercury, followed by various alkalies, yields warm tones, varying with the agent used, many of them very fine, but all of doubtful permanency.

After fixing and washing, slides may be toned in a gold and sulphocyanide bath through a long range of bluish tones, useful for moonlight effects.

Mounting calls for no particular mention, but I cannot refrain from adding a vigorous protest against the continued use of masks of circular and other eccentric shapes. Broadly speaking, the oblong form suits most subjects and produces the best effect. A safe rule for guidance is to fit the subject to the mask when taking the negative, and not to fit the mask to the subject at the last moment before binding the slide.

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* Newcastle Photographic Association.

Comments.

BY ANDREW C. COLE.

CRACKED CONDENSERS.—A correspondent in February's issue complains of having the misfortune to break three condensers in three consecutive exhibitions, and asks for a remedy, as new condensers and his pocket-book do not harmonize. If "Mr. Anxious," and in fact lanternists in general, would ascertain before lighting up that their condensers are not cell bound there would be fewer bills to pay. Condensers are burnished in their cells, and if the latter press upon the glass all round (especially the back lens) something must go when expansion begins, and as the brass ring never does, crack goes the glass. When a condenser is taken in the hand and shaken it should rattle, if it will not the chances are that there will sooner or later be a crack. There are, of course, conditions under which even a condenser mounted in the most approved fashion will fly, but the most common cause is that which I have mentioned.

USES FOR LANTERN.—I was a little surprised to see that "Arcanum" makes the statement that "The lantern as an entertainer and for effects has had its day." Surely he must be joking. The best method of looking at photographs or other pictures is by the aid of the lantern (or perhaps by the new double Lanternescope which I hear Mr. Tyler, of Birmingham, is about to introduce), and "Arcanum" may, in my opinion, rest assured that so long as photography is practised and people enjoy looking at pictures, the lantern as an entertainer and for effects will hold sway.

ETHER SATURATORS.—Mysterious explosions are afloat, or rather the news of them. Although not a *Saturator* hand myself, I know a thing or two about them. They must be used under certain conditions, but what these exact conditions are there seems a difficulty in ascertaining; perhaps some of our leading manufacturers of saturators would enlighten us. I have been told by some firms that they give a fine light, and if used under certain conditions are quite safe; the former is right enough, but what about the latter? Other firms speak against them. I think our editor could, if he chose, tell us something about the brass tubing of a saturator actually melting.

VERAK.—Although several hints have quite lately been given about this new instrument, I think the pithy description given on page 82 of last issue is the most concise that has appeared, and I observe it has been reproduced in several papers, some of which reproduced the drawing also. The arrangement displays *Verak*areful consideration on the part of Mr. Scott, the inventor. Many, I feel certain, will look forward to its exhibition.

TAPS.—With due defference to Mr. Nelson, who at a recent meeting of the Lantern Society at which I think he advocated the use of the household tap for all purposes connected with the lantern, for fine adjustment of gas under great pressure commend me to a tap where a cone screws into a seat such as those used on gas bottles, but with a fine screw capable of being easily turned with the fingers. This style of tap can be adjusted with a great degree of nicety, which the household form is incapable of giving under ordinary circumstances.

Editorial Table.

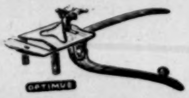
ART OF RETOUCHING (Hazel, Watson, and Viney, Limited, London).—This work, which is by Mr. J. Hubert, is written in a style which makes it very interesting. It is comprehensive and includes instructions both how to learn and also practise the art. Flash light also comes in for a share of the work, and some valuable hints are given under this heading. A photograph of J. Hay Taylor, Editor of the *Optical Magic Lantern Journal*, appears on the frontispiece.

CATALOGUES.—Until receiving a marked catalogue from Mr. Alfred Underhill, of Clarendon-road, Croydon, we were unaware that he was such an extensive *designer*, as well as manufacturer and painter, of slides. Samples accompanying the catalogue clearly show the high artistic abilities of Mr. Underhill. The prices mentioned are extremely moderate. We observe that slides of all the chief makers are also kept in stock.

CALENDAR, &C.—The *Photographic Times* (New York) have sent us a neat calendar framed, in which the days of the month are arranged in a circle; a movable hand can be set to denote the date. At the end of each month a sheet is torn off, revealing the next month, arranged in similar style. We have also received from the same source *a cyclopedic index* to the "American Annual of Photography." The index is very complete, but the book to which it refers has not come to hand.

CATALOGUE.—W. H Walmsley's (Limited), Philadelphia, U.S.A., catalogue contains interesting reading relative to the large stock of photographic goods sold by this firm. Full particulars of an improved photo-micrographic camera are also given. Mr. Walmsley has in course of preparation a work entitled *Photo-Micrography for Beginners*.

WICK TRIMMER.—By means of an instrument introduced by Messrs Perken, Son, & Rayment, of Hatton-garden, wick trimming is rendered very simple. The trimmer, of which we give an illustration, somewhat resembles a pair of pincers with a guillotine cutting movement, and as the cutting edge is kept in firm contact with the base, there is no chance of its getting slack and not doing its work effectively. The wick to be trimmed is racked up between two guides, the ends of which rest on the burner, whilst a compression of the handles cleanly cuts off a portion, leaving a crisp and slightly arched top to the wick. A four wick lamp can with the aid of the trimmer be put in good burning shape in less than one minute.



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A GOOD negative is to its maker a "a thing of beauty," and deserves from the moment of taking the plate from the box until the finished print is ready for exhibition all the care, thought, and inspiration that the painter gives to his canvas or the sculptor to his marble.—*C. W. Barnes.*

Society Meetings.

The Croydon Microscopical and Natural History Club (Photographic Section).—February 6.—Mr. J. Weir Brown in the chair. Mr. J. Howson gave a demonstration on bromide and alpha papers. Several members took part in a discussion that followed. February 20 was the occasion of a very interesting lantern evening (the president in the chair), when Mr. W. Low Sarjeant put a very fine set of slides through the lantern, entitled "Round about Exmoor." The whole of the pictures were taken on films, and the slides were of a high order, both as pictures and technique Mr. Sarjeant worked the lantern, and Mr. Sheldon (who accompanied him on his tour) very ably gave a short description of each slide as it was passed through the lantern, coupled with numerous amusing incidents that occurred on the way. The next Lantern Night will be on March 20.

Bath Photographic Society.—The chairman drew attention to the proposed visit of the Photographers' Convention to Bath next July; and a circular was read from the Camera Club, inviting members to be present at their conference on April 7 and 8 next. Mr. J. Dugdale then showed the improved form of lanternescope (see the *Optical Magic Lantern Journal* for Jan. 1), for the purpose of viewing lantern slides with both eyes at the same time. Mr. Pumphrey then followed up his demonstration of enlarging processes. In this instance a very simple apparatus was used—a dark chamber, in an aperture of which the negative to be enlarged was placed—in front of that an expanding camera minus the focussing and dark slide, and in front, and movable in three directions, an easel to carry the sensitive paper. A paraffin lamp placed within the chamber was used for focussing the large image on the easel, after which it was removed to a tin lantern with a red glass front. A piece of oiled ground glass was next placed before the negative to act as a diffuser, the sensitive paper adjusted on the easel, and the exposure made. This was done by means of magnesium ribbon. An exhibition of lantern transparencies then took place, the president's oxy-hydrogen lantern being used.

Lydd.—Under the auspices of the local branch of the Y.M.C.A. a lantern entertainment was given in the Town Hall on Jan. 27, by Mr. W. Stocks, of Rye, with his new oil lamp. The lamp produced an exceedingly good light. The first part of the programme consisted of "A tale of the sea," illustrated by views taken from life models. Part II. was made up of scenes of China, taken chiefly from direct negatives taken by the China Inland Mission. The connective readings were given by Mr. F. E. Wootton. The Mayor (Mr. E. T. Bass) presided, and in the course of a few remarks expressed his approval of the lamp, which, when properly perfected, would be very useful. In acknowledgment, Mr. Stocks said he was very happy to have done anything in his power to further the interest of the Y.M.C.A. The proceeds were divided between the China Inland Mission and the Lydd Y.M.C.A.

Rye.—On Tuesday evening, Colonel Brookfield, M.P., lectured at the George Hotel Assembly Room (under the auspices of the Y.M.C.A.), on "South Africa and the Diamond Mines." There was a fair attendance, and his Worship the Mayor (Alderman Bellingham) presided. The lecture was illustrated with pictures taken from photographic negatives, illuminated by Mr. Walter Stocks' newly-inventod patent lamp, which was used for the first time in Rye.

Brechin Photographic Association.—The monthly meeting was held on Feb. 3; Bailie Lawrence, vice-president in the chair. Mr. George Mackie, one of the vice-presidents, gave a practical demonstration of making lantern slides by the wet collodion process. The contact slides were exposed to a gas flame, but magnesium was used for the reduced ones. Both were very successful. Fifty slides sent for exchange by the Paisley Society were exhibited by means of the lantern. The society closed the lectures of the Mechanics' Literary and Scientific Institution for the session with an illustrated lecture by T. C. Hepworth, Esq., F.C.S. (read by A. R. M. Murray Esq.) "All about a London Daily." The lecture was fully illustrated by a series of lantern slides, showing the progress of an illustrated newspaper from the rag store and paper mill to the finished production on the breakfast table. At the close of the lecture nearly 100 Scotch and African views were exhibited.

Belfast.—The monthly meeting was held on Feb. 2; Dr. Coates, the president, occupied the chair. Several matters in connection with our coming exhibition were brought forward, and it was arranged that it should be held about the last week in April. A hand camera from Messrs. Robinson and Sons (Dublin) was handed round. In monthly lantern slide competition one hundred slides were handed in to be shown, but owing to the advanced hour a number had to be returned without being passed through the lantern. A special meeting was held on February 6, to receive the set of photography prize slides. There was a large attendance of members and their friends. The new lantern, supplied by Messrs. Archer and Sons, Liverpool, was used, and gave great satisfaction. The views were all above the average, and were much appreciated by those present, frequent applause greeting the slides as they appeared.

North London Photographic Society.—January 20th. This being a lantern night, a number of excellent slides, by Messrs. Grover, Illingworth, and the secretary, were passed through the lantern. Mr. Platt's new flash lamp was shown and explained. February 3, the Rev. E. Healy in the chair.—Some varnish, composed of amber dissolved in chloroform, was shown by Mr. Bishop, who found it excellent for either negatives or positives. He urged those using varnish not to pour the draining of the plate into the original stock, but into a separate bottle provided with a filter containing cotton wool. In answer to Mr. Coventon it was explained that when making bromide prints it was better to vary the distance from the illuminant according to the density of the negative than to preserve a uniform distance and subdue the light. Mr. Powell inquired if Commercial Ferrotype dry plates were sufficiently sensitive for flash light exposures, or if the limelight was sufficiently strong. Mr. Hart had found that the limelight as at present used was not suitable for the purpose, and that good wet collodion positives on glass could be obtained with the aid of the flash light. The question of halation was started by Mr. Coventon. It was said to be due to local over-exposure. Mr. Oakley had been able to remove halation to a great extent by rubbing down with cork and alcohol. Mr. Maskie suggested to give a good exposure, as then it was not necessary to develope through to the back of the plate. Mr. Hart advocated a backing for plates—viz., burnt sienna and dextrine, mixed with boiling water, afterwards thinned with methylated spirit; and Mr. Mackie suggested a backing composed of burnt sugar and gelatine.

Manchester Amateur Photographic Society.—On 9th, 10th, and 11th ult., this society held a lantern exhibition at the Atheneum. Six hundred were sent in by the members, from which 190 were selected by Messrs. J. Davenport and J. W. Wade (both of whom have taken many medals.) The lantern was manipulated by Messrs. Davenport, Stanley and Parrott.

Hackney Photographic Society.—On Jan. 29 the American slides were shown before this society. There was a good attendance of members, and quite a number of ladies put in an appearance. The secretary read announcements, and nominated Messrs. Sodean and J. A. Sinclair. The latter gentleman worked the lantern, and the slides were put through by the secretary, whilst Mr. E. H. Jones described the pictures. At the conclusion, slides of members were shown (Messrs. Barton, Gosling, and the secretary contributing), to which were added some charming Woodbury slides of Niagara. Mr. Henry Sturmey gave a very interesting lecture on Norway. He described his trip there fully, and many of the sides shown were exceedingly pretty. Some were rather humorous, as the hand-camera having been frequently used, many of the passengers fell victims to it. About 100 slides were put through the lantern, which was worked by the hon. sec. The society now possesses a fine single lantern, together with all appliances (cylinder, regulator, &c.), obtained from Mr. Pexton.

DEWSBURY.—February 12, 1891; Mr. A. S. Marriott, president, in the chair.—It was decided to hold an exhibition of members' work at the latter part of the present year. Mr. G. Kilburn (the secretary) gave a paper on "Stereoscopic Photography." The various effects of monocular and binocular vision was dealt with, also how to obtain stereoscopic effect from two flat drawings; and various other objects without a stereoscope were fully explained. Several methods adopted of utilizing quarter-plate and other size cameras with one lens was described. The reason for transposing the right-hand picture to the left, and how to make a transparency, was practically demonstrated before the members. A number of stereoscopes and transparencies brought to the meeting by Messrs. R. H. Taylor, J. Taylor, C. Naylor. Mr. Mitchell, and the secretary were placed on the tables.

PHOTOGRAPHIC SOCIETY OF GREAT BRITAIN.—January 27, 1891; H. Chaamon Jones, F.S.C., F.C.S., in the chair. —The chairman exhibited a Wray's detective lens of 6-in. focus, working as *f*/8, and covering a whole plate. Mr. W. H. Harrison raised the question as to whether double or triple condensers were best for the optical lantern. Mr. T. E. Freshwater considered the latter form best for small, and the former for large, discs. Mr. W. E. Debenham said a great fault of the ordinary double condenser was its large amount of spherical aberration.

LIVERPOOL AMATEUR PHOTOGRAPHIC ASSOCIATION. —The first ordinary meeting of the 28th session was held at the club-rooms, 3, Lord-street, on January 29. The President (Mr. Paul Lange) occupied the chair. A vote of thanks was accorded to the retiring officers of the association, and the president then distributed to the successful competitors the medals awarded in the prize competition of last November. Mr. F. Anyon gave an exhibition of a new lantern with which he showed a series of very fine slides, some of them of exceptionally high merit.

NORTH MIDDLESEX PHOTOGRAPHIC SOCIETY.—Feb. 9, 1891.—Mr. Walker (in the chair) said the subject for the evening was "The best treatment of winter and snow scenes." He thought that views in which there were no heavy objects in the foreground were best, and a developer weak in the reducing agent most suitable. Mr. Mummery had found that when the sun shone in winter it was more brilliant than at first appeared by reason of reflection from the snow. He used Thomas's hydrokinone developer, full strength. Mr. Norris had given fifteen to twenty seconds with large stop, and developed with full strength pyro and ammonia. Mr. Beadle had given fifteen seconds with *f*/32 on a hoar-frost view, and developed with pyro Ilford formula, used full strength. Mr. Gill showed some instantaneous pictures of figures in snow scenes, taken at 8.30 a.m. in December, and developed with ferrous oxalate—the iron weak at first, and strengthened as development proceeded. Referring to the widely different exposures, Mr. Cox had seen negatives taken under similar conditions, but with exposures varying from four seconds to five minutes, yield equal results in the hands of an experienced developer. Mr. Goodheed recommended in cases of great contrast, as in snow scenes, that the plate should be flooded with the ammonia and bromide, and the pyro added by drops till the image appeared. When all detail was up, a new developer strong in pyro and bromide, should be used to secure density and brilliance. The secretary had used Eittenagen and ammonia with meta-bisulphite. Mr. Pither had failed to get density with the weak pyro method. Mr. Gill showed two hand cameras of his own invention.

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Correspondence.

FLUID IN GAS CYLINDER.

[*To the Editor.*]

DEAR SIR,—We had an annoying experience with a hydrogen cylinder a few weeks ago which has puzzled us since to find out the cause. The cylinder was filled in December, and the following events took place upon using it for the first time. After screwing the regulator on I turned the gas on to see that all was right, and noticed that the gas came out in jerks. I then unscrewed the regulator and turned the gas on, and a small quantity of water was blown out, after which the gas worked all right. The cylinder was all right in several exhibitions since the above, but a few weeks ago during the severe frost we tested all our cylinders, and on applying the gauge to the particular one, the indicator never moved, and no gas came out when the valve was opened at full and the gauge taken off. A few days after this we were getting the cylinder ready to go and be refilled and happened to put the gauge on again, and found a little over a foot of gas in, and we also heard a noise when the bottle was moved, and on holding the bottle on end took from it just one pint of thick milky liquid, which turned yellow and clearer after standing a short time. A gentleman suggested to us that the severe frost condensed the gas, and it is evident that some of the liquid got frozen in the valve. We should esteem it a favour if some of your readers would give us the correct reason of this remarkable occurrence and the means to prevent it, and feel sure it would interest those of your readers who may have had like experiences.—Yours truly, J. EDELSTON AND SONS.

128, Hornley-road, Blackpool.

GRIFFITHS' REDUCING CAMERA.

[*To the Editor.*]

SIR,—I find an obvious defect in that very useful apparatus Griffiths' reducing camera, fortunately one that is easily remedied. When a picture is being made from a horizontal negative, there is no way of bringing out on the mounted slide that part of the foreground that comes next to the edge. Of course there should be some margin allowed in taking the negative, but practically, in a group for instance, the sitters' feet will sometimes get too near the edge of the glass, and be hidden by the mat of the lantern slide, of which the image covers the whole surface. The remedy is to contract the opening (at the negative end of the camera) by glueing a quarter-inch strip of wood along the bottom of it. Then with a saw and file deepen to the same extent the *top* groove into which the negative fits. To show the whole foreground on the slide one has only to invert the camera, and a strip of clear glass will be left, to be covered by the mat. J. C. OLIPHANT.

Charlotte-square Institution, Edinburgh.

A MYSTERY.

[*To the Editor.*]

SIR,—Your correspondent will find that the cause of his explosion was that the nipple was too large in proportion to the pressure of gas.—Yours, &c.,

SATURATOR ADVOCATE.

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Notes and Queries.

Ajax.—We prefer No. 3; 1 and 2 are identical.

H. G.—(1) The simplest way is to place negative and sensitive plate in contact in a printing frame, and expose to gas or a lamp for a few seconds, according to the intensity of light and density of negative. (2) No, we do not recommend any one make of plate in preference to another. See our advertising columns. (3) The developer will keep under the circumstances you mention, but a better plan is to keep that portion once used in a separate bottle.

E. Winter asks: (1) What is the best and most powerful light for magic lanterns? (2) What is the highest candle-power that is obtainable? Could 2,000 candle power be obtained? (3) Could square and oblong lenses be made, and would they act the same as usual? (4) What is the largest diameter on screen for a clear picture? *Answer.*—(1) Electric arc light. (2) Yes. (3) Yes; but they would cost more. (4) The only limit is the capacity of the hall; 40 feet is common in large halls.

B. J. Ware.—Move the ground glass further away and focus again, or use a more powerful object glass.

A. J. writes: (1) Is a much greater amount of light to be obtained by using two cylinders instead of taking gas from the main? (2) Are safety valves absolutely necessary to prevent return of gases? *Reply.*—With a blow-through jet every purpose can be served by gas obtained from the mains. (2) No; to prevent return of gas see that an even pressure is maintained.

South Australian Subscriber writes: In the *Photographic News* for 14th of March, 1890, page 211, at a meeting of the Camera Club, Mr. J. Traill Taylor said "that he was having apparatus constructed to make oxygen on the spot, and to supply it automatically to the lantern at proper pressure and in proper quantity directly it was evolved." Can you tell me if such an arrangement is in the market yet? My reason for asking is that my bag has gone wrong. Although I have only used it about thirty times it has commenced to leak in every fold. I gave a good price for it and believe it was one of the best. I certainly do not like bags, and if there is anything better I should feel obliged if you could tell me through your journal. *Answer.*—The apparatus is not yet in the market. The best method for retaining the oxygen in the absence of bottles is a metallic tank made on the gasometer principle, the pressure being given by weights put on the top.

Stick.—Try Prout's elastic glue.

Amateur.—We cannot understand your difficulty with the oxy-calcium light. Pull the wicks up high, and then bend them down so that the oxygen will blow in the flame and not on the wicks themselves.

Chesterfield.—By placing the cylinder under water when charged you can ascertain if there is a leak at the junction of the iron and gun-metal.

R. J. B.—The limes must have become damp.

W. F. Jones.—Your suggestions would carry the idea that matters pertaining to optics only were treated upon.

F. Weeks.—If you can send us a specimen we will use it if opportunity presents itself.

Silence.—The proportion of oxygen in the mixing chamber is too much in proportion to the hydrogen.

Petroleum.—(1) The wicks stand side by side; (2) write to Mr. W. C. Hughes (see his advertisement); he is the maker of the lamp mentioned.

W. B. H.—You do not say whether you are colouring photographs or painting on glass. We do not understand your reference to the gelatine. If you get this journal for March, 1890, you will find an article from which you may gain assistance.

Rev. Sanderson (Canada).—We have placed your letter in the hands of the Photo Manufacturers and Dealers Association of the United Kingdom, 7, Southampton-row, London, W.C., who will communicate with you, and make due inquiries respecting the money sent to the different firms.

E. Eccles, jun.—We will give you a six months' subscription for No. 1 of this journal, or a 6d. advertisement in our "General Wants" column would probably dispose of the lot.

W. S.—Thanks for reply *re* cracked condenser. The same was previously sent to us by Mr. Cole. (See his "Comments.")

S. E. R.—Do you refer to wet or dry plates, and what developer do you employ? Let us know fuller particulars. In the meantime try a much shorter exposure.

A. B. C.—It is probable that the firm from whom you purchased the cylinder had no record of its weight. It would in the usual course have been tested before being filled.

Lantern writes: "I am sorry I have not been able to give a description of the bi-unial lantern I am making, and seeing that several readers have asked about it, I will send it for next month. I have been away some five months at sea, consequently I have not had the opportunity. The oil lantern I made answers first-rate. The shadow between the wicks cast on the screen complained of by some lanternists is conspicuous by its absence. I can get a good, well-lighted disc 20ft. from screen. This is, I think, owing principally to the lamp, which is a three-wicked one. Some time, Mr, Editor, I shall give you an account of a magic lantern exhibition I attended at San Francisco during my last trip, which will be impressed on my mind for some time to come from a ludicrous point of view."

Pressure writes: "With pressure gauge and Beard's regulator attached to cylinder, I first stop the aperture of regulator, and then turn on the valve of cylinder. The gauge indicates, say, 100 atmospheres. I leave the valve turned on, and look again—say, half-an-hour—and find gauge still shews 100 atmospheres, without any appreciable change. So far well. Now, leaving all the rest as before, I turn *off* the valve of the cylinder, expecting the gauge to show no indication of any change, why should it? *But* the index at once begins quietly to go back, and continues to do so till it reaches the stop at zero. I have tried this several times with different cylinders and fittings, but with the same result. How is this riddle to be solved?"

T.—The Scented Luxor Oil is imported by the Chesbury Manufacturing Co., 41, Holborn Viaduct, E.C.

Flashes.—Too late for this issue.

A.—Postal order-Manchester-with no name or instructions.

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RIDSDALE FIRELIGHTER.—A photographer suggests a new use for the above. He writes: "When fuming sensitized paper it will be found very convenient. A little ammonia is poured upon the asbestos contained in the pan. Being provided with a handle (*à la* frying pan) it can readily be placed in, or taken out of, the fuming-box.

THE *American Journal of Photography* (Thomas H. McCollin and Co., Arch-street, Philadelphia) has lately entered upon its twelfth year. It publishes interesting articles by recognised writers. Five photographic illustrations appear with each issue, and at the end of the book Messrs. Collins display a monthly bargain list of photographic requisites. In this country subscriptions are received by Messrs. Trubner and Co., Ludgate-hill, E.C.